Claims

1.   A method of checking the feasibility or other properties of a process involving movement and/or assembly of items or components comprising setting up, within a computer, in terms of corresponding sets of data, a virtual three-dimensional space and, in such space, virtual versions of the items or components concerned, represented by corresponding sets of data, and operating a programme in the computer so as to manipulate the virtual items or components in said virtual space and determine, by operation of the computer, potential difficulties in manipulating corresponding real items or components in real space.

2.   A method according to Claim 1 wherein the data representing each said virtual article or component includes data as to nominal dimensions and data as to tolerances for deviations from said nominal dimensions in the corresponding real items or components and wherein the computer is programmed to detect intrusion of an envelope of one virtual component or item into an envelope of any other said item or component during such manipulations, such an intrusion representing a collision between components.

3.   A method according to Claim 2 wherein, where such a collision is detected at an intermediate stage of moving a virtual component from one virtual position to another, along one path, said program is operable to test variations in such path in order to determine, if possible, a non-colliding path.

4.   A method of setting up a manufacturing facility, such as an assembly line, comprising setting up, within a computer, in terms of corresponding sets of data, a virtual factory in virtual manufacturing premises with dimensions corresponding to the real premises available, virtual machinery comprising data as to dimensions, to positioning, movement and timing of such machinery, and

virtual personnel with corresponding data as to dimensions, limits of safe movement, speed of movement and the like and adjusting the data which is variable and thus represents degrees of freedom of the facility to arrive at an efficient workable arrangement.

5.   A method according to Claim 4 including providing a visual display of the operation of the virtual factory.

6.   A method according to any preceding claim and substantially as hereinbefore described.